UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,974	02/09/2004	Stanley T. Crooke	ISIS0003-102 (ISPH-0522US	3682

34138 7590 03/22/2006

COZEN O'CONNOR, P.C.
1900 MARKET STREET
PHILADELPHIA, PA 19103-3508

EXAMINER	
MCGARRY, SEAN	
ART UNIT	**PAPER NUMBER**
1635	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/774,974	CROOKE ET AL.	
	Examiner	Art Unit	
	Sean R. McGarry	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12/27/05;4/07/04;.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, and 5-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The specification discloses SEQ ID NOs:1 and 2 which corresponds to the DNA encoding and a human RNase III protein. The specification also provides a description of a few yeast and a bacterial and a *C.elegans* RNase III proteins. However, the claims are directed to encompass corresponding sequences from other species, mutated sequences, allelic variants, and splice variants, for example, where the sequences have a recited degree of identity to SEQ ID NO: 1 or the nucleic acids encode a protein with a recited homology to SEQ ID NO: 2). The claims are also drawn to cells that have an "enhancedRNAsIII activity where this activity is not limited to any particular source, for example. None of these sequences or cells meet the written description provision of 35 USC 112, first paragraph. The specification provides insufficient written description to support the genus encompassed by the claim. The specification, for example, shows that the exemplified human RNase III has 41% identity with *C.elegans* 15-17% identity with yeast and 16% homology with E.coli RNase III. It is stated at page 6 of the

specification that human RNase III (SEQ ID NOS: 1 and 2) is substantially larger and comprises more domains than the above RNase III's of different species. The claimed invention includes of a vast range of RNase III nucleic acids and "cells with enhanced RNAse III activity". Applicants specification and the prior art describe but a few. The claimed invention includes cells that may have an enhanced RNase III activity that may be due to any means and other specified means. For example the claims include cells with enhanced RNase III activity due to the endogenous upregulation of RNase III where the specification has simply not shown any compound or means to provide for such an enhancement of an endogenous Rnase III. The cells may have RNAse III added to them. One in the art clearly requires a description of a sufficient number of RNases in order to introduce them, in accordance with the broad scope instantly contemplated, directly to a cell or by nucleic acid transformation (ie requiring a nucleic acid sequence coding for the RNase III). One in the art would require, also for example a description or structure of compounds that may increase activity of or cause overexpression of any particular RNAse III (see page 35, for example). The specification asserts that overexpression can be effected by manipulation of cells. The specification fails to provide an adequate description of any moieties or other means that may be used to effect such manipulation, for example. The instant specification provides no actual cells that exhibit enhanced RNAse III activity and provide only SEQ ID NOS: 1 and 2 that might be added to cell to provide for increased RNAse III expression or activity. The specification nor the prior art provides any examples of cell that over express RNase III, cells where the enhanced RNAse III activity is observed in

the nucleus, cell that exhibit upregulation of endogenous RNase III polypeptide or by exogenously added RNase III. If applicant believes that the specification does show this or that the prior art shows this they are invited to point to such disclosure any such disclosures would be taken into consideration.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

The skilled artisan cannot envision the detailed chemical structure of the encompassed polypeptides and/or proteins, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The nucleic acid itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016. In Fiddes v. Baird, 30 USPQ2d 1481, 1483, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence.

Finally, University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 held that:

...To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.* , 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); In *re Gosteli* , 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966.

An adequate written description of a DNA, such as the cDNA of the recombinant plasmids and microorganisms of the '525 patent, "requires a precise definition, such as by structure, formula, chemical name, or physical properties," not a mere wish or plan for obtaining the claimed chemical invention. *Fiers v. Revel*, 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Accordingly, "an adequate written description of a DNA requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the DNA itself." Id. at 1170, 25 USPQ2d at 1606.

The name cDNA is not itself a written description of that DNA; it conveys no distinguishing information concerning its identity. While the example provides a process for obtaining human insulin-encoding cDNA, there is no further information in the patent pertaining to that cDNA's relevant structural or physical characteristics; in other words, it thus does not describe human insulin cDNA. Describing a method of preparing a cDNA or even describing the protein that the cDNA encodes, as the example does, does not necessarily describe the cDNA itself. No sequence information indicating which nucleotides constitute human cDNA appears in the patent, as appears for rat cDNA in Example 5 of the patent. Accordingly, the specification does not provide a written description of the invention of claim 5.

The species specifically disclosed are not representative of the genus because the genus is highly variant.

Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-15 are rejected under 35 U.S.C. 102(a) as being anticipated by Wu et al [The Journal of Biological Chem. Vol 275(47): 36957-36965, 2000.]

Wu et al disclose cells that have been treated with antisense to an RNAse III. It has been disclosed that those cells express less RNAse III and would therefore be less enhanced when compared to control cells with no antisense. The expression in the control cell is an over expression compared to the antisense treated cell.

Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Krinkle et al [NAR Vol. 18(16):4809-4815].

Krinkle et al disclose E.coli that are RNAse III negative. These cells are not enriched with RNase III and a wt cell would have enhanced RNAse III activity compared thereto.

Claims 1-4 are rejected under 35 U.S.C. 102(a) as being anticipated by Database EMBL Accession No. AF189011].

It is discloses a nucleic acid that is SEQ ID NO 1 that encodes a protein of SEQ ID NO: 2.

Claims 1-12 rejected under 35 U.S.C. 102(a) as being anticipated by Wu et al The journal of Biological Chem Vol 275(47):36957-36965, 2000]

Wu et al disclose the cloning of a nucleic acid sequence that is the same as SEQ ID NO: 1 that encodes SEQ ID NO: 2 (see GenBank accession no. AF189011 cited at

page 36960). It is disclosed that the sequence was cloned into a vector and the vectors were cloned using cells, see material and methods, for example. It is noted that the cloning process utilizes water, which is a pharmaceutically acceptable carrier.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al The journal of Biological Chem Vol 275(47):36957-36965, 2000].

Wu et al disclose the cloning of a nucleic acid sequence that is the same as SEQ ID NO: 1 that encodes SEQ ID NO: 2 (see GenBank accession no. AF189011 cited at page 36960). It is disclosed that the sequence was cloned into a vector and the vectors were cloned using cells, see material and methods, for example. It is noted that the cloning process utilizes water, which is a pharmaceutically acceptable carrier. Wu et al disclose the expression of the RNAse III domain of the protein from a vector in cells, but do not disclose the expression of the full length protein. At page 36961 it is taught that "Clearly, Much more work has is required with the full length human enzyme before comparisons of the specific activities of the enzymes are possible." Clearly the reference itself provides a clear motivation to express the full length protein for further

study rendering the invention as a whole *prima facie* obvious to on in the art at the time the invention was made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean R. McGarry whose telephone number is (571) 272-0761. The examiner can normally be reached on M-Th (6:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sean R McGarry
Primary Examiner
Art Unit 1635